

FLUIDCHEM VALVES (I) PVT LTD.





# PORTABLE VALVE MAINTENANCE EQUIPMENTS & MORE !!



### About FLUIDCHEM

Specialist in designing, manufacturing and supply of portable valve maintenance equipments, FLUIDCHEM is a company established in Vasai (India) since 1996. For over two decades now, we have delivered robust, reliable and efficient valve maintenance solutions to companies across industries. We are focused on manufacturing and designing Portable Valve Grinding and Lapping Machines for Gate Valves, Parallel Slide Valves, Swing Check Valves, Globe Valves (Flat and Conical Seat) and Safety Valves for Power Generation, Oil & Gas, Chemical, Petrochemical, Water and Nuclear application. In fact we are the first Indian company to manufacture and develop Portable Valve Grinding and Lapping Machines in India.

Having manufactured and supplied over 1000 + machines over the years, FLUIDCHEM has a dominant market share in India. We have also exported our Portable Valve Grinding and Lapping Machines to over 35+ countries so far. We are able to support you with a wide range of valve maintenance products and services thanks to our direct connection with our customers and end users. Our direct communication with customers and end users ensure you a fast, reliable and quality solution for all queries you might have regarding your valve maintenance and repairing application.

FLUIDCHEM has 2 manufacturing facilities located in central India. The main plant and office is located in Vasai (near Mumbai). The other factory is located in Ahmedabad, Gujarat. These plants are equipped with modern manufacturing facilities with special purpose machines, lathes, CNC machines and testing equipments for total control of all manufacturing operations.

We strongly believe we can offer to the market the best commercial package of product quality, global representation, service and delivery. Our self belief is backed by an enviable reputation with our clients who continue to re-order machines and equipments, replying on us to be an integral part of their supply chain and recognizing us as one of the leaders in our field!

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THE INDIAN NAVY

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IndianOil

H1NDUSTAN PAPER CORPORATION L1M1TED.

**PARTIAL CLIENT LIST** 



**EXPORTED TO OVER 35 + COUNTRIES** 







### WHY FLUIDCHEM'S PORTABLE VALVE LAPPING MACHINE



Valve Grinding and Lapping is an essential part of maintenance work that often interrupts production. Repairing leaking valves in industrial pipelines is a laborious operation involving extended downtime, production losses and substantial unwanted costs. Losses are minimized if valves can be reground in-situ, precluding the need to dismantle and remove defective valves from the pipeline.

FLUIDCHEM's Valve Grinding and Lapping Machines cut down valve grinding time by upto 90%! compared to other conventional grinding equipment available in the market. Furthermore, the grinding is of better quality and our Grinding and Lapping Machine pays for itself after only few grinding operations!

FLUIDCHEM's Valve Grinding and Lapping Machines are the proven Solution for online (in-situ) valve reconditioning and overhauling. All FLUIDCHEM Valve Lapping Machines are designed for operational compatibility. It can be used regardless of width or hardness of seat, regardless of position-horizontal or vertical, regardless of valve designround or oval body-with or without cover fingers and can be used manually, pneumatically or electrically (230V).

#### **FEATURES**

#### Portable, yet durable!

FLUIDCHEM's unique, lightweight In-Situ Valve Grinding and Lapping Machines are built tough so they can stand years of use. Building machines with less parts makes them more affordable and easier to maintain as compared to other complex and yet ineffective machines available in the market.

### In Heat or Cold!

Since no grinding paste is need FLUIDCHEM's In-situ Valve Grinding and Lapping Machines can be used at temperatures ranging from - 30°C (-22°F) upto  $100^{\circ}C(121^{\circ}F).$ 

### Exact Angles!



FLUIDCHEM's In-Situ Valve Grinding and Lapping Machines automatically sets itself to the correct sealing surface angle. This means maximum precision and perfect seating.

### **Perfect Grinding and Lapping!**

Grinding heads on FLUIDCHEM's In-Situ Valve Grinding and Lapping machines are individually driven discs, permitting rapid and efficient grinding of exceptionally smooth, flat surface for tightest possible seats. Since these Grinding heads rotates many times during one rotation of the holding plate the surface is perfectly ground, using first coarse and then fine paper. There are of course, different grades of abrasive papers for different valve material. Standard grit sizes are 80, 120, 220 and 400. Alternatively, grinding stones can also be used as per application.

• On-Line grinding and lapping for faster results!

FLUIDCHEM's In-Situ Valve Grinding and Lapping Machines are used where the valve are! The grinding equipment is fitted directly on the valve housing and can be used manually, pneumatically or electrically (230V). The entire set of equipment is supplied is one or two portable cases. In other words, our grinding and lapping machines are ideal for work carried out in the field and in confined and not easily accessible places.

#### Suitable for all Valves!

FLUIDCHEM's In-Situ Valve Grinding and Lapping Machines are available for gate valves, parallel slide valve, check valves, globe valves and safety valves in standard dimensions from size 15mm to 1800mm. Non standard sizes are also available on request and we regularly manufacture custom make machines as per client's requirement.

#### Multiple Uses!

FLUIDCHEM's In-Situ Valve Grinding and Lapping Machines can easily be set up to grind and lap, Body Seat, Wedge, Body Flange Raised Face and Bonnet Flange (See Images).



Used and Preferred By!

**Body Flange Lapping** 

Nuclear Power Plants, Thermal Power Stations, Fertilizer Plants, Chemical Industry, Boiler Manufacturers, Offshore oil Rigs, Petrochemical Plants, Pulp and Paper Mills, Refineries, Ship and Shipyard Companies, Valve Suppliers.

Drive Available



All models are available with either Pneumatic or Electric Drive (as per customer requirement).

## for Nuclear Power Reactor of PHWR type **END FITTINGS LAPPING MACHINES**



For CANDU designed (CANADA DEUTERIUM URANIUM)





**Calandria Channels with END FITTINGS of Nuclear Power Reactor** 

**END FITTING Assembly with Pressure Tube** 

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SAMPLE OF END FITTING



Showing seal face of **End Fitting** 

Seal Face Lapping Machine mounted on END FITTING

**End Fitting** 

Showing E-Face of E-Face Lapping Machine mounted on END FITTING

FLUIDCHEM Reactor End Fittings Lapping Machines Are Specially Developed For Nuclear Power Corporation Of India Ltd.under Supervision Of Technical Staff Of NPCIL During 1997.

SUPPLIED		END FITTING	DIMENSION	PLANT CAPACITY MW
Nuclear Power Corporation of India Ltd.	STAGE	INNER DIAMETER	OUTER DIAMETER	
Rajasthan Atomic P.S	1-2	90mm	150mm	160MW
Rajasthan Atomic P.S	3-4	90mm	150mm	220MW
Madrad Atomic P.S	1-2	90mm	150mm	220MW
Kaiga Atomic P.S	1-2	90mm	150mm	220MW
Kaiga Atomic P.S	1-2	90mm	150mm	220MW
Narora Atoc P.S	1-2	90mm	150mm	220MW
Kakrapara Atomic P.S	1-2	90mm	150mm	220MW
Tarapur Atomic P.S	3-4	120.70mm	169mm	540MW
Kakrapara Atomic P.S	3-4	120.70mm	169mm	700MW

### **PORTABLE GATE VALVE GRINDING & LAPPING MACHINE**

### Suitable For : Body and Wedge Seat Lapping of Gate Valves, Parallel Slide Valves and Swing **Check Valves.**

### Working Range : Size 15mm (1/2") to 1800mm (72")

FLUIDCHEM's In-Situ Gate Valve Grinding and Lapping Machines are suitable for Body Seat Wedge Seat and Flange Lapping of Gate Valves, Parallel Slide Valves and Swing Check Valves. These machines are used during valve maintenance as well as during production of valves. All Gate Valve Lapping Machines can be assembled in horizontal as well as vertical positions. They are supplied with self adhesive abrasive papers of rough, medium and fine grit. All models are available with either Pneumatic or Electric Drive. Heavy duty carrying / storage case are supplied along with complete machine accessories and spares with every model.

Model	GHF - A1565	GHF - A15150	GHF - B40350	GHF - C80600	GHF - D200800	GHF - E5001800
Size Range	15mm to 65mm	15mm to 150mm	40mm to 350mm	80mm to 600mm	200mm to 800mm	500mm to 1800mm
Submergible Depth Standard	280mm	380mm	600mm	1200mm	1200mm	2200mm
Optional	380mm	500mm	1400mm	1600mm	1800mm	2600mm
Drive Available	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic
Application	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping

\*Other dimensions will be given on request.

\*\*We customize and design machines as per customer requirement too.

### PORTABLE SAFETY VALVE GRINDING AND LAPPING MAGHINE

### Suitable For : Body Seat Lapping of Safety Valves

### Working Range : Size 10mm (3/8") to 350mm (14")

FLUIDCHEM's In-Situ Safety Valve Grinding and Lapping Machines are suitable for Body Seat of Safety Valves. They can also be used on Flat Seated Globe Valves. These machines are used during valve maintenance as well as during production of valves. All Safety Valve Lapping Machines can be used in horizontal as well as vertical positions. Models above 80mm (3") are supplied with Self Centering 3 Jaw Chuck. Self adhesive abrasive papers of rough, medium and fine grit are also provided for guick and easy setup. All models are available with either Pneumatic or Electric Drive. Heavy duty carrying / storage case are supplied along with complete machine accessories and spares with every model.

Model	GHF - XS1065	GHF - XS15150	GHF - YC80250	GHF - YC80350	The second second		
Size Range	10mm to 65mm	15mm to 150mm	80mm to 250mm (with 3 jaw chuck)	80mm to 350mm (with 3 jaw chuck)			Ť
Submergible Depth Standard	150mm 300mm	150mm 300mm	350mm 600mm	350mm 800mm		-	+
Drive Available	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	血		
Application	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping	56	-27	
*Other dimensions	s will be given on re	quest.			GHF - XS1065	GHF - YC80350	GHF - YC80350

\*\*We customize and design machines as per customer requirement too.

5

GHF - R40350

on 14" x 300#

Gate Valve

### Suitable For: Body Seat Lapping of Globe Valves (Flat Seat)

### Working Range: Size 10mm (3/8") to 1600mm (64")

**FLUIDCHEM's** In-Situ Globe Valve Grinding and Lapping Machines are suitable for Body Seat of Globe Valves (Flat Seat). These machines are used during valve maintenance as well as during production of valves.

All Globe Valve Lapping Machines can be used in horizontal as well as vertical positions. They are supplied with self adhesive abrasive papers of rough, medium and fine grit.

All models are available with either Pneumatic or Electric Drive. Heavy duty carrying / storage case are supplied along with complete machine accessories and spares with every model.

Model	GHF - X1065	GHF - X15150	GHF - Y40350	GHF - Y80600	GHF - Z200800	GHF - Z5001600
Size Range	10mm to 65mm	15mm to 150mm	40mm to 350mm	80mm to 600mm	200mm to 800mm	500mm to 1600mm
Submergible Depth Standard	150mm	150mm	350mm	350mm	350mm	On Request
Optional	300mm	350mm	600mm	600mm	600mm	On Request
Drive Available	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic	Electric Pneumatic
Application	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping	Grinding Lapping

\*Other dimensions will be given on request.

\*\*We customize and design machines as per customer requirement too.

### **PORTABLE GLOBE VALVE (CONICAL SEAT) GRINDING & LAPPING MAGHINE**

### Portable Globe Valve (Conical Seat) Grinding and Lapping Machine

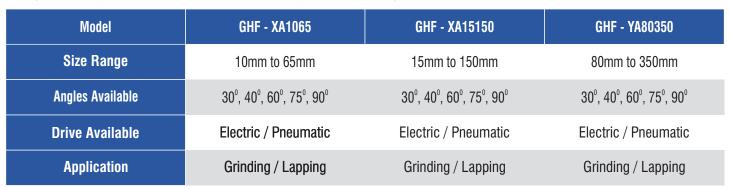
### Suitable For: Body Seat Lapping of Globe Valves (Conical Seat)

### Working Range: Size 10mm (3/8") to 350mm (14")

### Standard Seat Angles available: 30° (2x15), 40° (2x20), 60° (2x30), 75° (2x37.5), 90° (2x45)

(other angles and dimensions are available on request).

**FLUIDCHEM's** In-Situ Globe Valve Grinding and Lapping Machines are suitable for Body Seat of Globe Valves (Conical Seat). These machines are used during valve maintenance as well as during production of valves. All Globe Valve Lapping Machines can be used in horizontal as well as vertical positions. They are supplied with self adhesive abrasive papers of rough, medium and fine grit. All models are available with either Pneumatic or Electric Drive. Heavy duty carrying / storage case are supplied along with complete machine accessories and spares with every model.



\*Other dimensions will be given on request.

\*\*We customize and design machines as per customer requirement too.





GHF - Y40350 on 8" x 150# Globe Valve

### FG SERIES LAPPING MACHINES



### For Gate, Globe, Check, Safety and Control Valves

FLUIDCHEM's FG Series machines are robust, but light weight gear operated grinding and lapping machine for 'in-situ' or 'inshop' repair of damaged valve seat. The unique set up and construction makes the versatile FG Series machines suitable for all sorts of vertical seats (Gate, Parallel slide, Check Valves) and horizontal mounted seats (Globe & Safety Valves) in the range 175mm to 1000mm.



### **UNIQUE FEATURES**

Versatile, universal tool for Gate, Parallel Slide, Globe and Safety Valves. It has a high material removal rates with the highest flatness accuracy.

### **GATE & PARALLEL SLIDE VALVES**

**FLUIDCHEM's** FG Series machines are suitable and equipped for grinding and lapping the faces on both the Gate valve seats and wedge. Both seats inside the valves body are quickly machined in quick setting of the mounting bracket which also allows you to accurately lap both faces of the wedge.

### **GLOBE AND SAFETY VALVES**

Within minutes the FG Series machines can be prepared for machining the flat seat of both Gate / Parallel Slide, Globe/ Safety Valves. The ball-joint construction in the arm ensures a very easy alignment and accurate control of the force.





### WEDGES

Machine is easily set up for wedge grinding using the existing clamping system and the additional mounting plate for wedge lapping which is provided along with the machine.

Model	FG 300	FG 600	FG 800	FG 1000
Size Range	175mm to 300mm	175mm to 600mm	175mm to 800mm	175mm to 1000mm
Submergible Depth Standard	900mm	900mm	900mm & 1400mm	900mm & 1400mm
Drive Available	Electric / Pneumatic	Electric / Pneumatic	Electric / Pneumatic	Electric / Pneumatic
Application	Grinding / Lapping	Grinding / Lapping	Grinding / Lapping	Grinding / Lapping

\*Other dimensions will be given on request.

### FG SERIES LAPPING MACHINES

#### **FEATURES:**

#### Portable, yet durable!

FLUIDCHEM's unique, lightweight FG Series machines are mechanically driven gear operated portable valve grinding machine which provides the solution for on-line (In-Situ) valve reconditioning. Our machines are built so they can stand years of use!

#### Unique design for faster results:

Our unique, lightweight universal clamping system allows rapid accurate mounting for grinding valves seats or wedges.





Operating checks and replacement of abrasive disc can be carried out without disturbing the assembly. No realignment is necessary when repositioning the grinding head.

#### Versatile and Adjustable:

FLUIDCHEM's lapping machines can be adjusted to fit most valve sizes on the market. The FG Drive head carries five telescopically adjustable radial arms to which the grinding heads are attached. Grinding heads are available in range and sizes, permitting numerous within 175mm to 1000mm range.

#### Individually driven grinding heads for perfect results:

FG's unique mechanical driven grinding head results in a very high material removal rates and extreme flatness accuracy. The machine is equipped with different grinding



heads having diametrically adjustable grinding discs. The grinding heads are mechanically driven by an internal gearing system that rotates the wheels at the same speed producing the perfect cross hatch machining pattern.

#### **Horizontal and Vertical Grinding**

Gear driven heads can be angled to grind valve seats in any angle from vertical to horizontal.





### **Multiple Uses!**

FLUIDCHEM's FG Series machines can easily be set to grind and lap, Body Seat of Gate as well as Globe Valve, Wedge Seat, and Bonnet Flange (See Images).



FG Machine mounted on 10" valve for grinding valve flange



View from bonnet FG machine assembled on valve seat 10" x 300# Unique flexibility:



FG Machine mounted on 8" globe valve



Lapping of Wedge Size : 10"

All FLUIDCHEM machines are designed for operational compatibility. They can run from bench mountings and are driven by pneumatic or electric powered motors. This unique degree of flexibility means that machines can be readily adapted to suit a wide variety of customer needs.

#### **Complete with carrying case**

Every FLUIDCHEM machine is supplied with a

rugged customized carrying / storage case complete with all necessary accessories.





### **CAST IRON LAPPING PLATES**

FLUIDCHEM's Cast Iron Lapping Plates are extensively used for accurate hand lapping

of ferrous & non-ferrous parts to obtain a perfect oil tight surface.

### **Salient Features**

- Made from close grained plain cast iron conforming to grade FG: 220 of IS : 210 (equivalent to GG20 / FT20 / 30-A). Higher grades also offered on request.
- Casting stress relieved to relive internal stresses.
- Hand scraped surface finish.
- Offered in square, rectangular and round sizes.
- Constructional features of square and rectangular sizes similar to those of Cast Iron Surface Plates as per IS: 2285.
- Plates up to 630 x 630 mm provided with handles for lifting. Larger plates provided with cored holes in peripheral for lifting by mechanical means.
- Provided with 3 x3 mm groves at a nominal pitch distance of 25 to 30 mm on top surface.
- Supplied with rexine cover for top surface protection.

Square & Rectangular Sizes (L & B)	Flatness accuracy in microns		Round Sizes (Diameter)	deviation fro	s on overall om flatness in rons.
Sizes in mm	Grade 0	Grade 1	Sizes in mm	Grade 0	Grade 1
250 x 250	4	7	100	5	12
400 x 250	4	8	150	5	13
400 x 400	5	9	200	5	13
630 x 400	5	10	250	6	14
630 x 630	5	10	300	6	14
1000 x 630	6	12	400	7	16
1000 x 1000	7	14	600	7	16

CONSUMABLES

### Self Adhesive Abrasive Papers:-

We supply a wide range of high quality abrasives with various backings for all applications in all required forms and dimensions.

### Application :-

Rough grinding • Finish grinding • Polishing (lapping)

### Product Range :-

Grinding rings in all dimensions · Grinding disks · Sheets

### Available Grits:-

• 40, 80, 120, 220, 400, 600, 800, 1000

### Abrasive:

- Silicon Carbide
- Aluminium Oxide

### CBN (Cubic Boron Nitride) Grinding Heads:

High performance CBN (Cubic Boron Nitride) grinding heads for portable grinding and lapping machines are available in various sizes. Useful for rough grinding of heavily damaged seats (will have to be purchased separately).



**Round Type** 





### TABLE TOP LAPPING MACHINE



**FLUIDCHEM** offers a comprehensive range of standard lapping and polishing systems for use across all industrial sectors. Special purpose machines can also be developed for specific applications. Our Lapping Machines are Single Side Machines which are available in various sizes and are suitable for vast majority of lapping applications including high stock removal, ultra hard materials, precisionwork to light band tolerances.

### **ADVANTAGES:**

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- Operationally fast, with high degree of repetitive results with no extra skill.
- Stressing of jobs eliminated as no holding force is required
- Odd shapes and different materials all can be lapped to a fine finish of 0.3 μm or less and surface finish of 0.02 Ra with absolute uniformity on almost all types of hard materials.
- Variety of materials such as Cast Iron Soft/ Hardened Steel, Stainless Steel, Bronze, Aluminium, Carbon, Plastics, Ceramics, Tungsten, Silicon, Stellite, Ferrite, etc. can all be lapped.
- One operation surface finish
- Significant reduction in lapping costs
- Reduced inspection requirements Optimum geometry and surface finish
- Better utilisation of machine time
- Cleaner environment conditions

### **TYPICAL APPLICATIONS:**

Valve Body Seats, Wedge Seats, Mechanical Seals, Piston Rings, Compressor Components, Pumps & Valves Components, Hydraulic Components, Gauge Blocks, Precision Spacers, Metal Cutting inserts, Bearing Races, Springs, Slitter Knives, Fuel Injection Components, Ceramic, Quartz Crystals, Precision Optics, Optical Flats, Metrological/Measuring Instrument components and so on.



The pneumatic lift machines will raise and lower the weights and also apply pressure where necessary. All are fitted with mandatory safety controls.





The open face machines are for use where work pieces are either large in size and can be lapped under their own weight or where pressure application by hand weights is sufficient.

Description	TTLM - 18	TTLM - 24	TTLM - 28	TTLM - 36	TTLM - 56
Lapping Plate OD (MM)	457	610	712	915	1425
Conditioning Ring OD (MM)	210	272	320	410	595
Conditioning Ring ID (MM)	170	229	270	360	530
Conditioning Ring HT (MM)	89	89	89	89	100
No of Rings	3	3	3	3	3
Plate - RPM	30 / 40 / 50	30 / 40 / 50	30 / 40 / 50	30 / 40 / 50	30 / 40 / 50
Timer Range - MTS	0 - 99	0 - 99	0 - 99	0 - 99	0 - 99
Drive Motor - HP	2	3	3	3	15
Abrasive Pump Motor - HP	0.25	0.25	0.25	0.25	0.25
Machine Dimension	815 x 865 x 1100	915 x 865 x 1200	1075 x 865 x 1350	1220 x 865 x 1590	1525 x 1625 x 1580

\*All models are available with pneumatic lift options

**CONSUMABLES AVAILABLE:** Lapping Paste, Diamond Powder, Boron Carbide Powder, Silicon Carbide Powder, Lapping Oil, Aluminium Oxide Powder, Conditioning Rings, Composite Plates, Polishing Compound.

### **PIPE BEVELLING MACHINES**



### **PIPE BEVELLING MACHINES**

FLUIDCHEM make Portable T Shape Pipe Bevelling Machine are designed for portable use in pipe machining operations without using gas cutting process. The rugged design have itself centering inner clamping which allows one skilled operator to perform the end preps quickly and safely, avoiding the slow and arduos grinding operation. It is typical heavy duty ID mounted pipe beveller.



### **Special Feature**

Electrically Operated Pipe Bevelling Machines

- Choice of electrically operated motor for convenience.
- Choice of air operated motor where electric shock risks are high.
- Prepares perfect joint with V prep for 100% penetration welds.
- Consistent/repeatable quality.
- Quick and Convenient to operate



#### **Standard Tools**

30° Beveling Tool, 37°Beveling Tool, 0° Plane Tool, 15° Beveling Tool (Please mention in your inquiry/ order the material of the pipe and angle to be made; e.g. Stainless Steel, Angle:37°)

Model No.	Working Range (I.D. mm)	Wall Thickness (mm)	Rotating Rate (RPM)
GHF-PB28	16mm to 28mm	≤ 8	58
GHF-PB82	28mm to 82mm	≤ 15	53
GHF-PB159	65mm to 159mm	≤ 20	34
GHF-PB330	150mm to 330mm	≤ 20	14

### **OD Mounted AUTO FEED PIPE BEVELING MACHINE**

OD Mounted Auto feed pipe facing machines are designed for the end beveling of small diameter pipes at narrow working places. It is widely used for water wall tubes, fins, boiler economizer, superheater, reheater, power plants and other industries.

### NARROW DESIGN PIPE BEVELLING MACHINE

This machine is designed for pipe end bevelling of small diameters, pipe out-mounted compact installation. It is used in pipe end bevelling process of professional equipment and onsite overhaul. It meets the requirement of process:- narrow space of on-site repair and large scale of repairing.

It comes with high quality of bevelling tools, which can process different grades of Cast Steel, Alloy Steel, Stainless Steel and other material of metal popes.



Narrow Design Pipe Beveling Machines

**On-Site Process** 



Model No.	Working Range (I.D. mm)	Wall Thickness (mm)	Rotating Rate (RPM)
<b>GHF-NPB53</b>	08mm to 53mm	≤ 8	58
<b>GHF-NPB63</b>	20mm to 63mm	≤ 12	55
<b>GHF-NPB73</b>	25mm to 73mm	≤ 12	54
<b>GHF-NPB83</b>	30mm to 83mm	≤ 12	43
GHF-NPB108	50mm to 108mm	≤ 12	42





























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